

**Notice of Allowability**

Application No.

09/996,777

Examiner

Hai Vo

Applicant(s)

MORITA ET AL.

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**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the filing of 03/03/2005.
2. ☒ The allowed claim(s) is/are 1-3,16-22,25 and 26.
3. ☐ The drawings filed on \_\_\_\_\_ are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
  1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date 0526.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

### EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Roger C. Hahn on 05/26/2005.

The application has been amended as follows:

**Rewrite claim 1:**

A multiple layered laminated polyolefin foam having a plurality of polyolefin layers laminated on at least one side of a polyolefin foam by a co-extrusion foaming method and wherein the polyolefin foam has a boiling xylene insoluble content of 0 to 5 wt%, said polyolefin foam comprising:

an outermost layer formed from one of the plurality of polyolefin layers,

an innermost layer formed from one of the plurality of polyolefin layers,

wherein a thickness of the outermost layer is 5 to 80  $\mu\text{m}$ ; and a density  $d$  (g/L) of said polyolefin foam, a melt flow rate  $X$  (g/10 min) of a polyolefin resin constituting the innermost layer, and a thickness  $Y$  ( $\mu\text{m}$ ) of the innermost layer satisfy the following relationships (1) to (4):

$$Y \leq 0.29 d X \quad \dots (1)$$

$$5 \leq X \leq 40 \quad \dots (2)$$

$$70 \leq Y \leq 300 \quad \dots (3)$$

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$$100 \leq d \leq 300 \quad \dots (4)$$

wherein a thickness of the entire laminated foam is 3 to 8 mm and a closed cell of the laminated foam is no less than 60%,

wherein the outermost layer contains a polymeric-type antistatic agent so that a surface layer resistivity is no more than  $1 \times 10^{13} \Omega$ ,

wherein a ratio ( $\alpha/\beta$ ) of a melt flow rate ( $\alpha$ ) of the polymeric-type antistatic agent and a melt flow rate ( $\beta$ ) of a base resin of the outermost layer is no less than 0.5 and  $\beta$  is 3 to 35 g/10 min.

**Rewrite claim 2:**

The multiple layered laminated polyolefin foam according to claim 1, wherein the density  $d$  (g/L) of the polyolefin foam is 120 to 300 g/L, the melt flow rate  $X$  (g/10 min) of the polyolefin resin constituting the innermost layer is 8 to 40 g/10min, and the thickness  $Y$  ( $\mu\text{m}$ ) of the innermost layer is no more than  $0.26 dX$ .

**Rewrite claim 3:**

The multiple layered laminated polyolefin foam according to claim 1, wherein the base resin selected from the group consisting of polypropylenes, polyethylenes and mixtures thereof.

**Rewrite claim 16:**

The multiple layered laminated polyolefin foam according to claim 1, wherein the polymeric-type antistatic agent comprises a compound selected from the group consisting of polyetheresteramides and polyethers as a main component.

**Rewrite claim 17:**

The multiple layered laminated polyolefin foam according to claim 16, wherein the polyetheresteramide is a polymer obtained by polymerization reaction of a polyamide with an alkylene oxide adduct of a bisphenol.

**Rewrite claim 18:**

The multiple layered laminated polyolefin foam according to claim 17, wherein the polyamide is selected from the group consisting of caprolactam polymer, 12-aminododecanoic acid polycondensate, and adipic acid-hexamethylene diamine polycondensate.

**Rewrite claim 19:**

The multiple layered laminated polyolefin foam according to claim 16, wherein the polyether is a compound having at least two quaternary ammonium bases and is a reaction product of (a) an oxyalkylene ether obtained by addition reaction of an alkylene oxide with a phenol-divinyl benzene addition polymer, (b) one type of glycidyl ether selected from the group consisting of glycidyl ethers of polyoxyalkylene glycols and glycidyl ethers of adducts of phenols and alkylene oxides, an amine compound having an aliphatic hydrocarbon group containing 1 to 22 carbon atoms, and a quaternizing agent.

**Rewrite claim 20:**

The multiple layered laminated polyolefin foam according to claim 19, wherein (a) the polyoxyalkylene ether is an adduct obtained by the addition reaction of ethylene oxide and a copolymer of ethylene oxide and propylene oxide with a bisphenol-divinyl benzene addition polymer, (b) the glycidyl ether of polyoxyalkylene

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glycol is glycidyl ether of polyoxyethylene glycol, and the adduct of a phenol and an alkylene oxide is an adduct of bisphenol and ethylene oxide.

**Rewrite claim 21:**

The multiple layered laminated polyolefin foam according to claim 1, wherein the polymeric-type antistatic agent is present in the outermost polyolefin layer in an amount of from 2 to 30 wt.%.

**Rewrite claim 22:**

The multiple layered laminated polyolefin foam according to claim 16, wherein the polymeric-type antistatic agent is present in the outermost polyolefin layer in an amount of from 2 to 30 wt.%.

**Rewrite claim 25:**

The multiple layered laminated polyolefin foam according to claim 1, wherein the closed cell ratio of the laminated foam is at least no less than 70%.

**Rewrite claim 26:**

The multiple layered laminated polyolefin foam according to claim 1, wherein the closed cell ratio of the laminated foam is at least no less than 80%.

***Reasons for Allowance***

2. The following is an examiner's statement of reasons for allowance: Noted that Examiner's amendment and Applicants' amendment are sufficient to overcome the art rejections and sufficient to place the instant claims in condition for allowance. The inclusion of the polyolefin foam having a boiling xylene insoluble content up to 5 wt% renders the claims unobvious over the prior art. Akao discloses the polyolefin

foam having the degree of cross-linking of at least 10% for improving the physical strength or elasticity of the foam material. Chaudhary et al (US 6,395,791) evidences that the xylene insoluble content is the indicative of the degree of cross-linking. Likewise, it is clearly apparent that Akao's polyolefin foam has the xylene insoluble content of at least 10 wt %. Therefore, the polyolefin foam of present invention has higher xylene insoluble content than that of Akao's polyolefin foam.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai Vo whose telephone number is (571) 272-1485. The examiner can normally be reached on M,T,Th, F, 7:00-4:30 and on alternating Wednesdays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (571) 272-1478. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

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Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

HV

*Hai Vo*

**HA VO  
PRIMARY EXAMINER**